REMARKS

Replies to the different remarks of the examination report:

Regarding 2, rejections of claims 1-11 because of being anticipated by US6104817 to Ding:

Applicant submits that Ding does not disclose the same features as claimed by applicant.

In the device of US6104817 (Ding) it is not disclosed that the motion signals are used to control the lower-frequency components of the motion and the current signals are used to control the higher-frequency signals of the motion as it is the case in applicant´s device. These features are claimed in applicant´s claim 1 as main features.

Ding discloses (col. 8, first chapter to line 20) impedances of the feedback-networks at the current-signal path and of the velocity-signal path. An impedance gives by definition the relation between the current through the impedarce (as "input" value) and the corresponding voltage across the impedance (as "output" value) in the frequency domain, i.e. the voltage (as e.g. a function of "s" in the Laplace - domain) is given by multiplication of the current with the impedance function. Ding further discloses that the impedance in the velocity-feedbackpath has a low-pass characteristic and the impedance in the current-signal feedback path has a high-pass characteristic. He also discloses that it could be just the other way arround without making a big difference, i.e. the low-pass impedance in the current-signal feedback path and the high-pass in the

velocity. Ding further discloses in the drawings (e.g. Fig. 8a) that a current-feedback topology is used. That means that in fact not impedances Z(s) are the effective and determining transfer functions in the feedback-paths but the inverted impedances, i.e. the admittances Y(s). The voltages (velocity-signal, current-signal) are the input values, and the currents are the output values according to i(s) = Y(s) * u(s). These currents are transferred to the input of the controller (=inverting amplifier). This fact is also stated in claim 1, line 26, col. 15, for the motional-feedback, but not stated in the description. This fact is also not stated for the "feedback-means" in the current-feedbackpath.

An investigation of the feedback-characteristicof an inverted low-pass filter shows that the feedback-strength in the velocity-signal path (i.e. the influence of the velocity signal on the whole control circuit) rises with the frequency to indefinite values, i.e. at higher frequencies the motion signal is predominantlyused to control the motion.

This behaviour is contrary to the behaviour of the system disclosed by the applicant where at higher frequencies the current-signal is used to control the motion and the motion-signal is only used to control lower-frequencymotion components.

In Dings invention the inverted impedance in the current-signal feedback-path has a high-pass characteristic. So the influence of the current signal on the control system is very low at low frequencies and rises to a constant value with increasing frequencies.

If Ding´s "way arround" configuration is used a high-pass filter is arranged in the motional-feedback path which is again contrary to the system of the applicant.

To summarize, in Ding´s system the current-signal is not used to control predominatly the higher-frequency motion and the motion-signal is not used to predominatly control the lower-frequency motion as it is claimed in applicant´s claim 1.

Concerning claim 3 of applicant: Ding does not disclose a low-pass filter arranged in the motion-feedback path. He discloses an inverted low-pass filter which is in effect a PD-element (proportion-differentiating) which attenuates lower frequencies and lets pass higher frequencies.

Concerning claim 4 of applicant, Ding does not disclose that the corner frequencies of the filters are the same as it is the case in applicants invention. According to Ding´s Fig. Fig. 16b the corner frequencies are quite different.

So applicant submits that applicant´s claims 1-11 **define novel structure under Section 102** in relation to Ding´s disclosures.

Applicant also submits that the claims are **non-obvious under Section 103** because Ding´s system is too different in function and purpose: Ding´s system is mainly used to alter the transfer characteristic of any commercially available loudspeaker system to more convenient values whereas applicants system is a high-precision motion-contrd system which is used for precision control (of amplitude and phase angle) of the motion of the membrane of an industrial electro-acoustic transducer. Ding does not teach anything about the reasons why to use both current-feedback and motional-feedback, and he does not teach why the motional feedback should be used for control of lower frequencies and the current-feedback for control of higher frequencies.

Applicant respectfully asks for reconsideration of the rejections and reexamination of the claims.

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